

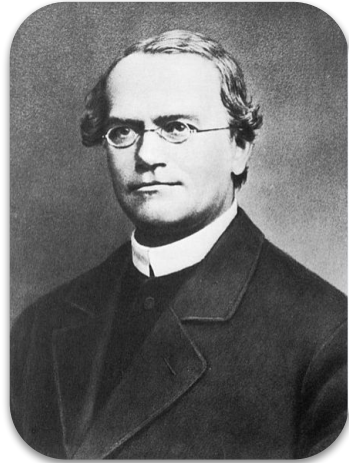


Literature Research and Review

Anastasia Bernaz

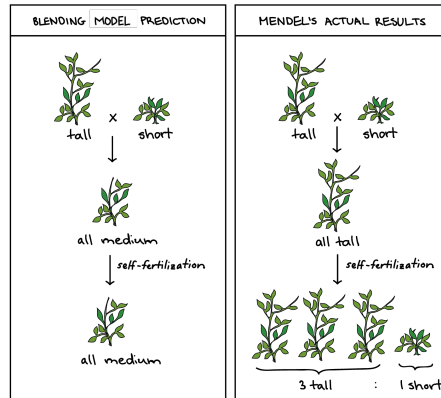
Slides based on Phoebe Oldach & Dominika Wawrzyniak's presentation

Why is literature research important?



Gregor Mendel

1854 - 1863



P Generation



F₁ Generation



F₂ Generation



Despite presenting his findings in 1865 and publishing them in 1866, Mendel's work remained largely overlooked until its rediscovery around 1900 by several independent researchers, notably Erich Tschermak von Seysenegg, Carl Erich Correns, and Hugo de Vries.

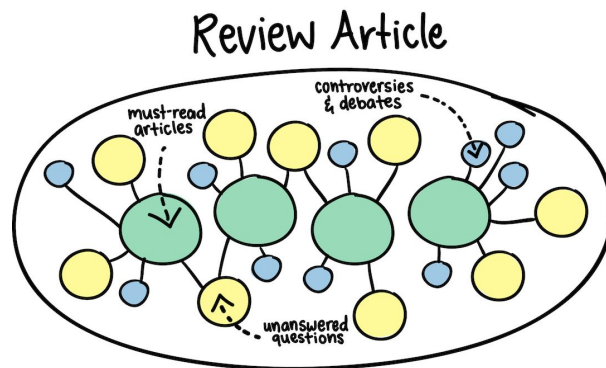
How to do literature research?

- ✓ Google Scholar
- ✓ Scholar Labs
- ✓ PubMed
- ✓ Scopus Elsevier
- ✓ Review articles
- ✓ Bibliography section

Google Scholar | Labs



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How to do literature research?

Google Scholar

A search engine tailored for academic content, helping researchers efficiently find peer-reviewed papers, track citations, and access academic resources

The image shows the Google Scholar homepage on the left and the advanced search interface on the right. On the homepage, the 'Advanced search' link in the left sidebar is circled in red. The advanced search interface on the right contains several sections for refining search results.

Google Scholar My library Labs

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- Labs
- Advanced search**
- Settings

Advanced search

Find articles

with **all** of the words

keyword 1

with the **exact phrase**

with **at least one** of the words

keyword 1 keyword 2

without the words

where my words occur

☒ anywhere in the article

☐ in the title of the article

Return articles **authored by**

e.g., "PJ Hayes" or McCarthy

Return articles **published in**

e.g., J Biol Chem or Nature

Return articles **dated** between

e.g., 1996

How to do literature research?

Google Scholar

Boolean Operators:

AND: Narrows results,

requiring *both* terms

OR: Broadens results,

finding *either* term

NOT (or -): Excludes terms

The screenshot shows the Google Scholar interface. The search bar at the top contains the query "stability AND enzyme OR protein", which is circled in red. Below the search bar, the results are listed. On the left side, there are filters for "Any time", "Sort by relevance", "Any type", and "include citations" (which is checked). The "Create alert" button at the bottom of the filters is also circled in red. The search results list several articles related to protein stability and enzyme activity, including "Protein stability and enzyme activity at extreme biological temperatures", "A relationship between protein stability and protein function.", "Understanding and increasing protein stability", "Protein structure and the energetics of protein stability", and "Thermal stability and protein structure". Each result includes the title, author, journal, and a brief abstract.

Google Scholar

stability AND enzyme OR protein

Articles

About 7,110,000 results (0.11 sec)

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Any time

Since 2026

Since 2025

Since 2022

Custom range...

Sort by relevance

Sort by date

Any type

Review articles

☐ include patents

☒ include citations

☒ Create alert

Protein stability and enzyme activity at extreme biological temperatures

G Feller - Journal of Physics: Condensed Matter, 2010 - iopscience.iop.org

... This review mainly focuses on **protein stability** and **enzyme** ... temperatures and are therefore very **stable**. As a result of their ... two distinct selective pressures (**stability** for thermophiles and ...

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[PDF] uliege.be

A relationship between protein stability and protein function.

BK Shoichet, WA Baase, R Kuroki... - Proceedings of the ..., 1995 - pnas.org

... **protein**. Here we describe experiments that directly test the **stability**function hypothesis in T4 lysozyme, an **enzyme** well characterized for the effects of mutation on structure and **stability** (...

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[PDF] pnas.org

Understanding and increasing protein stability

CÓ Fágáin - ... Biophysica Acta (BBA)-Protein Structure and Molecular ..., 1995 - Elsevier

... **stability** can be of literally vital importance in **protein** pharmaceuticals or therapeutics. **Stability** of **protein** ... can now alter a **protein's stability** characteristics by **protein** engineering. This in...

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Protein structure and the energetics of protein stability

AD Robertson, KP Murphy - Chemical reviews, 1997 - ACS Publications

... The focus of this review is on relationships between **protein stability** and **protein** structure ... the molecular origins of **protein stability** can be gleaned from the **protein** data alone and (2) can ...

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Thermal stability and protein structure

P Argos, MG Rossmann, UM Grau, H Zuber... - Biochemistry, 1979 - ACS Publications

... to the **protein** sequences used here and their associated "optimal" temperatures of **stability** and ... While the exact mean thermal **stable** range for a given **enzyme** is debatable, the general ...

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Rational engineering of enzyme stability



VGH Eijssink, A Bjørk, S Gåseidnes, R Sirevåg... - Journal of ..., 2004 - Elsevier


[PDF] academia.edu

How to do literature research?

Google Scholar

Alerts help stay on top of the latest findings without having to do a manual search every day

 Alerts

Alert email: [BernazStasy1902@gmail.com](#) [Change email](#)

☐ Include less relevant results

[CREATE ALERT](#)

Most relevant results 1000+ results in the last year.

[Stable rapeseed protein microgel suspensions](#)
M Moutkane, CPK Mudau, G Balakrishnan, B Jaquette... - Food Hydrocolloids, 2025
... and their **stability** under different conditions of pH and ionic strength. Finally, we will show the effect of napin on the formation and the **stability** of the microgels. Interestingly, we find that in the presence of NaCl there is no need to use purified ...

[Exploring enzyme-MOF \(metal-organic framework\) catalytic systems: trade-offs between enzyme activity and MOF stability](#)
H Tang, D Fan, Y Chen, S Han - Green Chemistry, 2025
... between **enzyme** activity and MOF **stability** in **enzyme**... **stability** and **enzyme** activity in **enzyme**-MOF composites. In this review, we first explored and summarized various factors and interactions in the **enzyme**@MOF catalysis system ...

[See more](#)

☐ Less relevant results 1000+ results in the last month.

[Comparative analysis of protein composition, digestion dynamics, and amino acid release between preterm infant formula and human milk: Implications for preterm ...](#)
Y Liu, G Mu, X Yang, X Cheng, J Kang, X Zhu - Food Research International, 2025
... In this study, an integrated approach combining **protein** compositional analysis, **protein** digestion profiling, and targeted amino acid ... "**protein** composition-in vitro digestion behavior-amino acid release patterns." Our findings revealed that β -lactoglobulin ...

[Rheological response of whey protein deposits forming under shear in concentrated conditions](#)

How to do literature research?

Scholar Labs

An experimental
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Google Scholar that
summarizes how multiple
papers answer your
question

Google Scholar | Labs



Ask a detailed research question to find relevant papers

Example questions

Has anyone used single molecule footprinting to examine transcription factor binding in human cells?

Are hydrogen powered cars, compared to electric / internal combustion engine cars, really better for the environment?

What is the standard of care for intraductal papilloma without atypia? When is surgical excision recommended, and when can it be managed conservatively?

Find papers from the past 2 years about how to determine whether an abstractive summary generated by an LLM is grounded.

Ask Scholar

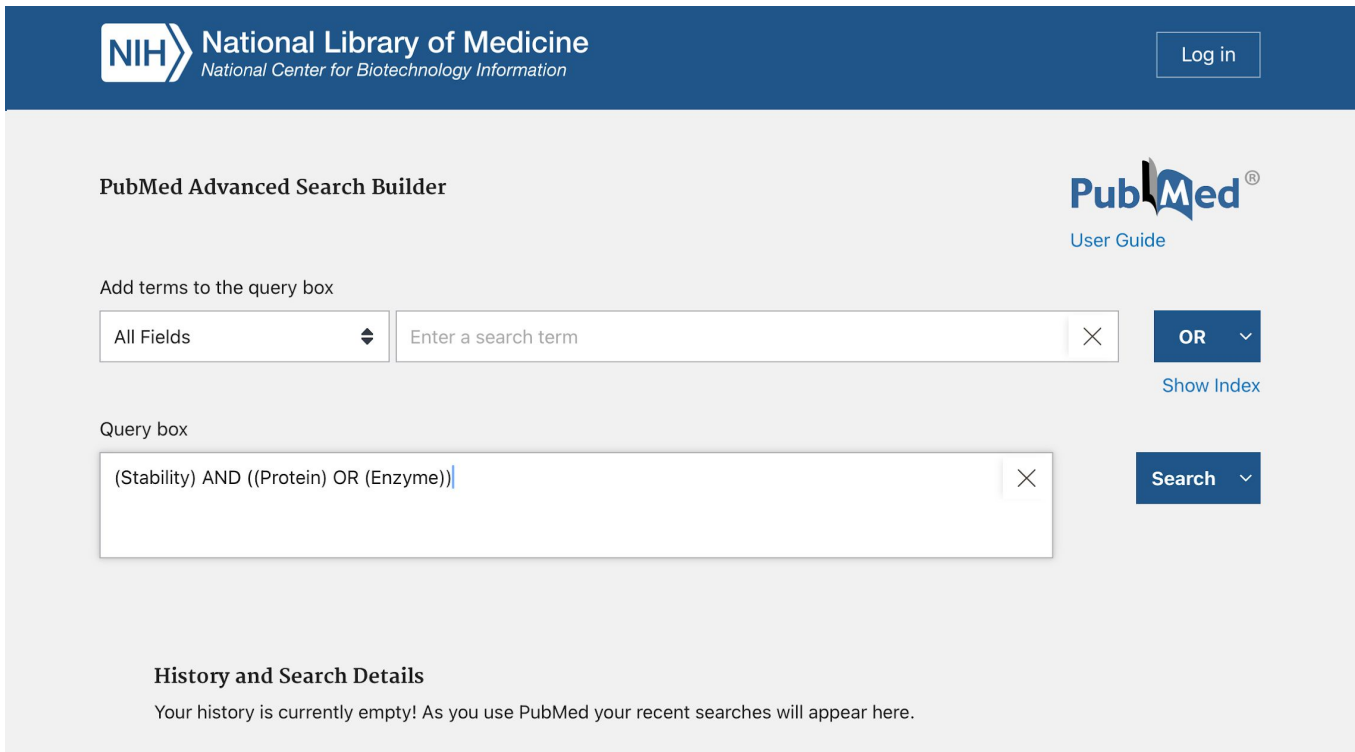


Scholar Labs is experimental and can make mistakes. [Help & Privacy](#)

How to do literature research?

PubMed

A specialized search engine tailored for the fields of medicine, biotechnology, and the life sciences, offering direct access to peer-reviewed publications and clinical data

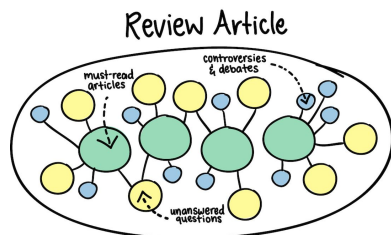


The screenshot displays the PubMed Advanced Search Builder interface. At the top, a dark blue header contains the NIH logo, the text "National Library of Medicine" and "National Center for Biotechnology Information", and a "Log in" button. Below the header, the page title "PubMed Advanced Search Builder" is on the left, and the PubMed logo with a "User Guide" link is on the right. The main search area includes a section "Add terms to the query box" with a dropdown menu set to "All Fields" and a text input field containing "Enter a search term". To the right of this input is a blue button labeled "OR" with a dropdown arrow, and a link "Show Index". Below this is a "Query box" containing the search string "(Stability) AND ((Protein) OR (Enzyme))". To the right of the query box is a blue button labeled "Search" with a dropdown arrow. At the bottom, a section titled "History and Search Details" states: "Your history is currently empty! As you use PubMed your recent searches will appear here."

How to do literature research?

Review articles

Review articles from renowned journals are a great way to gain an overview about a given field



Check out the **References** section for field leaders and more background information

- Abstract
- Introduction
- Intrinsic Protein Disorder
- Experimental Approaches for Assessing Intrinsic Protein Disorder
- Computational Tools for Disorder Prediction
- Evolution of IDPs/IDRs
- IDPs/IDRs in Diseases
- IDPs/IDRs as Drug Targets
- Conclusions
- Author Contributions
- Funding
- Institutional Review Board Statement
- Informed Consent Statement
- Data Availability Statement
- Acknowledgments
- Conflicts of Interest
- Abbreviations
- References

◀

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How to do literature research?

Research Rabbit

Allows you to explore and organize papers, discover new articles to read based on topic or author, and export citations to accelerate your research

It is also a great tool for visualizing your bibliography

The screenshot displays the Research Rabbit web interface. On the left, a list of articles is shown, each with a title, author, and a brief description. The articles listed are:

- Tanford, 1969**: Protein denaturation. C. Theoretical models for the mechanism of denaturation. *Advances in Protein Chemistry* (No abstract)
- Pace, 1985**: Determination and analysis of urea and guanidine hydrochloride denaturation curves. *Methods in Enzymology* (No abstract)
- Timasheff, 1992**: The control of protein stability and association by weak interactions with water: how do solvents affect these processes? *Annual review of biophysics and biomolecular structure* CONTENTS PERSPECTIVES AND OVERVIEW • • • • • 67 THERMODYNAMIC CONTROL OF EQUILIBRIA BY COSOLVENTS • • • • • 70 RELATION
- Møller, 2010**: The sarcoplasmic Ca^{2+} -ATPase: design of a perfect chemi-osmotic pump *Quarterly Reviews of Biophysics (print)* Abstract The sarcoplasmic (SERCA1a) Ca^{2+} -ATPase is a membrane protein abundantly present in skeletal muscles where it functions as an
- Henzler-Wildman, 2007**: Dynamic personalities of proteins *Nature* (No abstract)

On the right, a citation network visualization shows the relationships between these articles. Nodes represent articles, and arrows indicate citations. The network includes nodes for Pace 1985, Timasheff 1992, O'Brien 2007, Canchi 2013, and Hunger 2012. Arrows point from Canchi 2013 to the other four nodes, indicating it is a more recent publication that cites them.

Below the list of articles, a pagination bar shows "1 - 20 of 1,489" and a "More recently published" link.

On the far right, a sidebar for the article "Canchi, 2013" is visible, showing the title "Cosolvent effects on protein stability.", the subtitle "Annual review of physical chemistry (Print)", the authors "Deepak R. Canchi A. Garcia", and a "Save to..." button. Below this, there is a "Dive deeper on this article" section with buttons for "Similar" (1.7k), "Refs" (129), and "Cited By" (495).

How to find a good paper?

Beware of:

- Conflicts of interest (check Affiliations/Funding)
- Overclaiming results
- AI-generated content

Ethics declarations

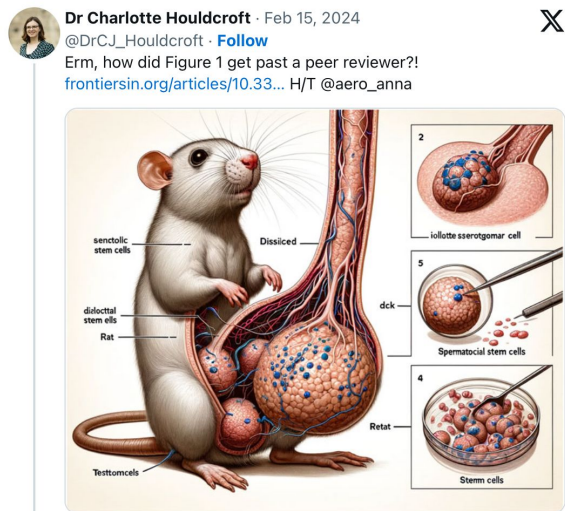
Competing interests

The authors declare no competing financial interests.

Supporting Information

Details of kinetic and computational studies, inhibition experiments, and X-ray structural data as well as standard reaction conditions. The atomic coordinates and structure factors have been deposited at the Protein Data Bank, <http://www.pdb.org> (PDB ID codes [3G01](#) and [3G02](#)). This material is available free of charge via the Internet at <http://pubs.acs.org>.

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How to do literature review?

Three-Pass Approach

First pass: Gives a general idea about the paper

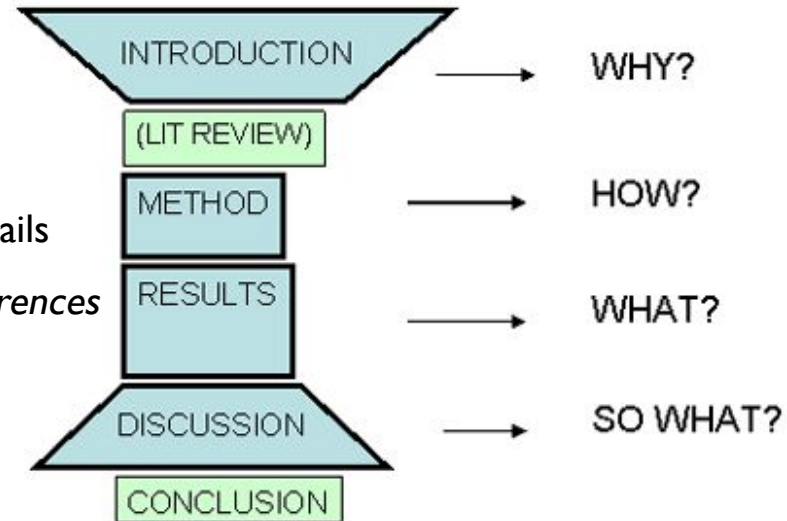
- Focus on *Abstract, Introduction, and Conclusion*

Second pass: Let you grasp the paper's content but not its details

- Focus on *Introduction, Figures, Results/Discussion, and References*

Third pass: Helps you understand the paper in depth

- Focus on *Methods and Results*



How to do literature review?

Elicit

An AI-powered research assistant designed to summarize papers, extract key data from tables, and find additional relevant literature based on specific research questions and not just keywords

The screenshot displays the Elicit AI research assistant interface. At the top, the Elicit logo is on the left, and navigation links for 'Recents', 'Library', and 'Alerts' are in the center. On the right, there are buttons for 'Upgrade', 'Help', and a user profile for 'Anastasia'. Below the navigation bar, the main content area shows a research report titled 'Protein Stability and Evolvability'. The report includes a summary paragraph, a 'REFERENCES' section with several citations, and a 'Status' sidebar on the right. The 'Status' sidebar shows four completed tasks: 'Gather sources' (50 sources found), 'Screen sources' (10 sources included), 'Extract data' (80 data points extracted), and 'Generate report' (with a 'Save PDF' button). At the bottom of the interface, there are buttons for 'Download BIB', 'Download RIS', and 'Download TXT'.

Protein Stability and Evolvability

Research report View only

evolvability, but rather that optimal stability levels depend on the specific functional transition, population structure, environmental conditions, and evolutionary timescale under consideration. This context-dependence explains the seemingly contradictory findings and provides a predictive framework for understanding when stability will enhance versus constrain evolutionary innovation.

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Rostam M. Razban, P. Dasmeh, Adrian W. R. Serohijos, E. Shakhnovich (2021). *Avoidance of protein unfolding constrains protein stability in long-term evolution*. Biophysical Journal

L. Agozzino, K. Dill (2018). *Protein evolution speed depends on its stability and abundance and on chaperone concentrations*. Proceedings of the National Academy of Sciences of the United States of America

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